AT9-99-132

Disclosure AUS8-1999-0800

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Required fields are marked with the asterisk (*) and must be filled in to complete the form.

Summary

Status	Under Evaluation
Processing Location	AUS
Functional Area	61 - NCS - VP DEVELOPMENT (JEFF SMITH)
Attorney/Patent Professional	David Mims/Austin/IBM
IDT Team	Balenda McNair/Austin/Contr/IBM
Submitted Date	08/04/99 11:24:24 AM
Owning Division	NCS [Add/Change]
PVT Score	To calculate a PVT score, use the 'Calculate PVT' button.

Inventors with Lotus Notes IDs

Inventors: Richard Schwerdtfeger/Austin/IBM, Larry Weiss/Austin/IBM, Rabindranath Dutta/Austin/IBM

Inventor Name > denotes primary contact	Inventor Serial	Div/Dept	Manager Serial	Manager Name
> Schwerdtfeger, Richard S.	323425	95/GGYA	463307	McKay, R.E. (Roger)
Weiss, L.F. (Larry)	104112	95/GGYA	463307	McKay, R.E. (Roger)
Dutta, Rabindranath	978208	95/PM4A	565591	Demsky, S.H. (Scott)

Inventors without Lotus Notes IDs

IDT Selection

IDT Team: Balenda McNair/Austin/Contr/IBM	Attorney/Patent Professional: David Mims/Austin/IBM

Response Due to IP&L : 09/10/99

Main Idea

*Title of disclosure (in English)
Distributed DOM based transcoding mechanism for providing accessibility and ECMA JavaScript facilities.

*Idea of disclosure
1. Describe your invention, stating the problem solved (if appropriate), and indicating the advantages of using the invention.

BACKGROUND
Documents transferred to Web clients often require content transformations to take account of user, device, and network preferences. In particular, in the last few years new devices for accessing the Web have tended to proliferate. Such devices include palmtops, handhelds, web telephone, WebTV and so on. Often these target devices may not have the resources to provide an assistive technology solution for the disabled user. Resources may be limited by memory, processor speed, screen characteristics,

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Distributed DOM based transcodir_ ,ochanism for providing accessibility and ECMA Java .ipt facilities. - continued

multimedia support, storage capabilities etc. **Furthermore, current Web technology usually attempts to separate client-side processing from server-side processing** (illustrative examples being server-side Javascript vs. client-side Javascript, or servlets vs. applets). In many situations where client-side processing is minimal or computationally slow, the client side processing capabilities must be duplicated or performed in the server. That is to say, the Netscape model of Javascript where visual elements are not part of Server Side Javascript implementations is not an appropriate model for transcoding (in this context, it should be remembered that Javascript is widely supported on the Web).

The Document Object Model (DOM) is a platform- and language-neutral interface that will allow programs and scripts to dynamically access and update the content, structure and style of documents.
Hence the DOM can be used for transcoding very effectively. The DOM Level 1 Specification is now publicly available; it has been reviewed by W3C Members and other interested parties and has been endorsed by the Director as a W3C Recommendation. DOM Level 2 specifications are in the working draft stage and it is likely to become an adopted standard in the future. Some commercial Web browsers have implemented many aspects of the DOM in the client thereby making it a viable mechanism for implementing many aspects of web technologies. The DOM is rapidly assuming the de-facto status as the platform and language-neutral interface on the Web.

INVENTION SUMMARY

We propose a novel method based on distributed DOMs to transcode for assistive technology. Since DOMs allow scripts to dynamically access and update content we also provide methods to enhance and incorporate prior-art Web-based scripting technologies.

2. How does the invention solve the problem or achieve an advantage, (a description of "the invention", including figures inline as appropriate)?

The Transcoding proxy provides a mechanism to tailor the information provided to the client by acting as a reverse-proxy. The paradigm of complex interactions with a distributed DOM is made feasible by HTTP 1.1 protocol's ability to keep the TCP/IP link alive across multiple requests, thereby allowing small, frequent client-server interactions to take place without incurring the overhead of re-establishing the connection. The management of sessions could also be performed through established mechanisms such as cookies, URL re-writing etc.

CLAIMS:

1. Method for distributed DOM based transcoding paradigm for client side accessibility.
2. Associated method for duplicating client-side ECMA Javascript facilities in the server for the preferred embodiment.
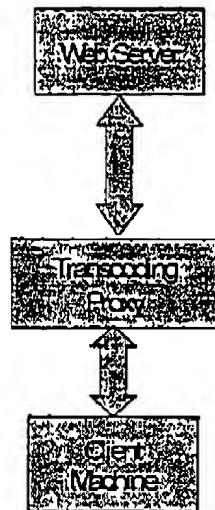
PREFERRED EMBODIMENT OF INVENTION
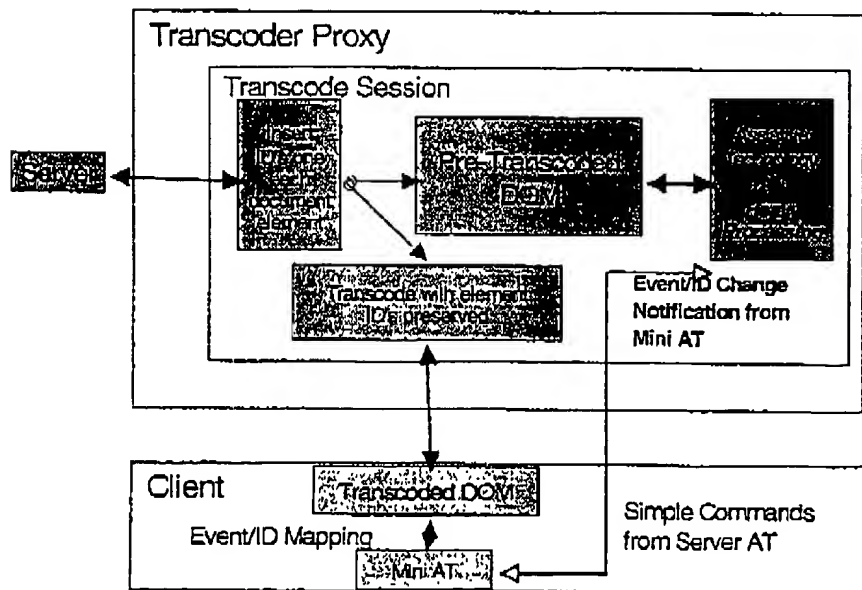
Distributed DOM Based
Transcoding Mechanism

For providing accessibility and ECMA
Javascript facilities

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Prior Art

Distributed DOM for Accessibility

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Accessible Web PDA Example:
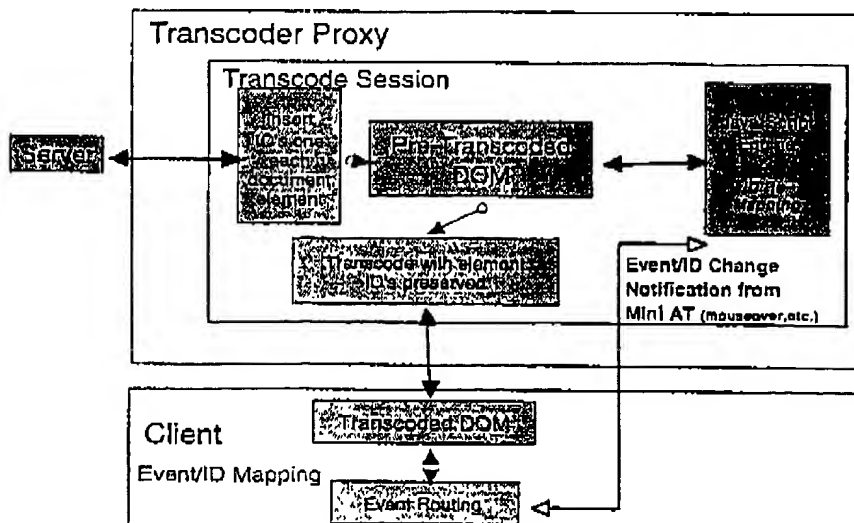# Focus Changes to Link
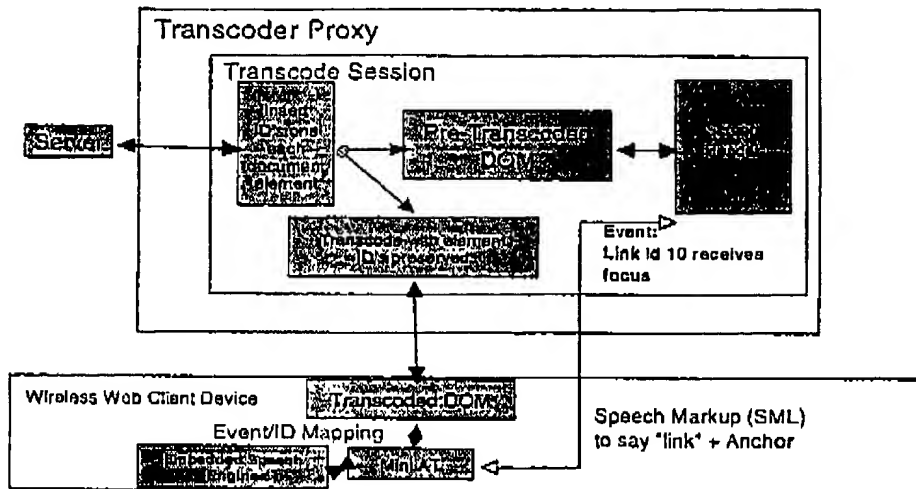
Distributed DOM for ECMA
JavaScript Support

3. If the same advantage or problem has been identified by others (inside/outside IBM), how have those

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others solved it and does your solution differ and why is it better?
Dealing with JavaScript on transcoded clients has not yet been designed or developed. The accessibility group has not yet dealt with hand-held devices. However, the transcoding group in Austin (in association with Raleigh) is part of a product team with a product in the field that transcodes Web data to hand-held devices like Nokia telephones. The Austin's team's specific responsibility includes session management, caching and security infrastructure for transcoding. The transcoding group has not considered distributed DOM in transcoding at this point - although they have performed DOM based transcoding in a prototype AFP to SVG transcoder. This DOM based transcoding is currently not in a distributed DOM paradigm. This invention in many ways attempts to integrate transcoding with accessibility and provides a comprehensive solution in a distributed DOM based paradigm.

The invention review board at Austin, has in the few months approved a number of transcoding invention disclosures for search and a quite few of them have been filed with the patent office. None of the transcoding invention disclosures sent for search relate to a distributed DOM as outlined in this disclosure.

4. If the invention is implemented in a product or prototype, include technical details, purpose, disclosure details to others and the date of that implementation.

disdomnatant F (ATTACHED FILE WITH THE FIGURES ALREADY GIVEN IN THE "Detailed description of Invention")

There are possibilities for implementation of this design in the transcoder project in process in NCSD, Austin.

*Critical Questions (Questions 1 - 7 must be answered)

*Question 1
On what date was the invention workable? 07/26/99 Please format the date as MM/DD/YYYY (Workable means i.e. when you know that your design will solve the problem)

*Question 2	
Is there any planned or actual publication or disclosure of your invention to anyone outside IBM?	○ Yes ● No
If yes, Enter the name of each publication or patent and the date published below. Publication/Patent: Date Published or Issued:	
Are you aware of any publications, products or patents that relate to this invention?	○ Yes ● No
If yes, Enter the name of each publication or patent and the date published below. Publication/Patent: Date Published or Issued:	

*Question 3	
Has the subject matter of the invention or a product incorporating the invention been sold, used internally in manufacturing, announced for sale, or included in a proposal?	○ Yes ● No
Is a sale, use in manufacturing, product announcement, or proposal planned?	○ Yes ● No

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If Yes, identify the product if known and indicate the date or planned date of sale, announcements, or proposal and to whom the sale, announcement or proposal has been or will be made.
    Product:
Version/Release:
  Code Name:
     Date:
   To Whom:
If more than one, use cut and paste and append as necessary in the field provided.

*Question 4	Yes ○
Was the subject matter of your invention or a product incorporating your invention used in public, e.g., outside IBM or in the presence of non-IBMers?	No ●
If yes, give a date. Please format the date as MM/DD/YYYY	

*Question 5	Yes ○
Have you ever discussed your invention with others not employed at IBM?	No ●
If yes, identify individuals and date discussed. Fill in the text area with the following information, the names of the individuals, the employer; date discussed, under CDA, and CDA #.	

*Question 6	Yes ○
Was the invention, in any way, started or developed under a government contract or project?	No ●
	Not sure ○
If Yes, enter the contract number	

*Question 7	Yes ○
Was the invention made in the course of any alliance, joint development or other contract activities?	No ●
	Not Sure ○
If Yes, enter the following :Name of Alliance; Contractor or Joint Developer	
Contract ID number	
Relationship contact name	
Relationship contact E-mail	
Relationship contact phone	

Question 8	Yes ○
Have you submitted, or are you aware of, any related disclosure submission?	No ●
If Yes, please provide the title and docket or disclosure number below:	

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Distributed OOM based transcoding mechanism for providing accessibility and ECMA Javascript facilities. - continued

Question 9
What type of companies do you expect to compete with inventions of this type? *Check all that apply.*
☒ Manufacturers of enterprise servers
☐ Manufacturers of entry servers
☒ Manufacturers of workstations
☒ Manufacturers of PC's
☐ Non-computer manufacturers
☐ Developers of operating systems
☐ Developers of networking software
☐ Developers of application software
☐ Integrated solution providers
☐ Service providers
☒ Other (Please specify below)
Manufacturers of PDA devices or slim clients requiring web access with limited resources. Services offered for wireless access to the Web. Companies marketing to government agencies requiring accessible, wireless portable solutions.

Patent Value Tool (Optional - this may be used by the inventor and attorney to assist with the evalua

(The Patent Value tool can be used by you or the evaluation team to determine the potential licensing value of your invention.)

The Patent Value Tool has not yet been used to calculate a score.

Post Disclosure Text & Drawings
Enter any additional information relating to this disclosure below:

(Form Revised 12/17/97)

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